Leica M500 OH3

Assembly instructions

10 711 895 – Version -

Leica

MICROSYSTEMS

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These assembly instructions contain important safety instructions as well as information on setting up the instrument.

Before attempting to set up or use the product read carefully through the assembly instructions.

Intended use of instrument

- The Leica M500 OH3 surgical microscope system is an optical instrument which uses magnification and illumination to improve the display of objects.
- It can be used for observation, documentation as well as in human and veterinary surgery.
- The Leica M500 OH3 surgical microscope system may only be used in closed rooms and beneath a strong ceiling.

Directions for the person responsible for the instrument

- Ensure that the surgical microscope is used only by qualified personnel.
- Carry out regular inspections to make sure the user is complying with safety requirements.
- Brief the user thoroughly and explain the meaning of the hazard signs and safety instructions.
- Allocate responsibilities for getting the instrument ready for work, for operating it and for maintaining it. Monitor compliance with this.
- Do not use the Leica M500 OH3 surgical microscope system unless it is in perfect condition.
- If any faults develop which might put the safety of people at risk, contact your Leica representative immediately or Leica Microsystems (Switzerland) Ltd., CH-9435 Heerbrugg.
- The effect of the Leica M500 OH3 surgical microscope on other instruments has been tested as specified in EN 60 601-1-2. The system has passed the tests relating to emissions and immunity. Respect the usual precautionary and safety measures relating to electromagnetic and other forms of radiation.
- Any liability for the functioning of the system will always be the liability of the owner or operator of the system should the system have been incorrectly installed by persons not so commissioned by Leica Ltd.

Directions for the user

- If you use accessories from another manufacturer with the Leica M500 OH3 surgical microscope system, make sure that this manufacturer confirms that the combination is safe to use. Follow the instructions in the user manual in question.
- Follow the instructions given in this manual.
- Follow the instructions given by your employer regarding the organization of work and safety at work.
- Modifications may not be carried out to the Leica M500 OH3 surgical microscope system.

Disposal

- The relevant national statutory provisions shall apply to the disposal of the products.

Symbols in these assembly instructions

The symbols used in these assembly instructions have the following meaning:

Warning
This indicates a potentially hazardous situation which could result in death or serious injury.

Caution
This indicates a potentially hazardous situation which could result in minor or moderate injury but possibly considerable material, financial or environmental damage.

Usage information: Information provided to help the user use the product technically correctly and also efficiently.

⇨Action required: This symbol indicates that you need to perform a specific action or series of actions.

Goods inward check/delivery inspection

Damaged goods reduce the safety level.
The use of damaged products can cause severe injury.
Check the packaging and goods for transport damage:

- The transport container should be undamaged.
- The delivery as listed in the order folder should be complete.
- The optional accessories as listed in the order folder should be complete.
- The user manual should be present.

If damage has occurred, have the safety of the goods inspected by the Leica service workshop before using them.

Safety directions in these assembly instructions

Caution
Damage to microscope if the screws are tightened too excessively!
⇨Avoid the use of excessive force when tightening all screws.
⇨Set the torque wrench to the torque specified. Apply the wrench until this torque is reached (signalled by a clicking noise). Do not tighten further.

Warning
Risk of severe personal injury when the stand moves in an uncontrolled manner!
⇨Lock the foot brakes during the mounting process.

Caution
Risk of injury through falling wheel counterweight!
⇨During the change, ensure that your feet are not under the wheel counterweight.

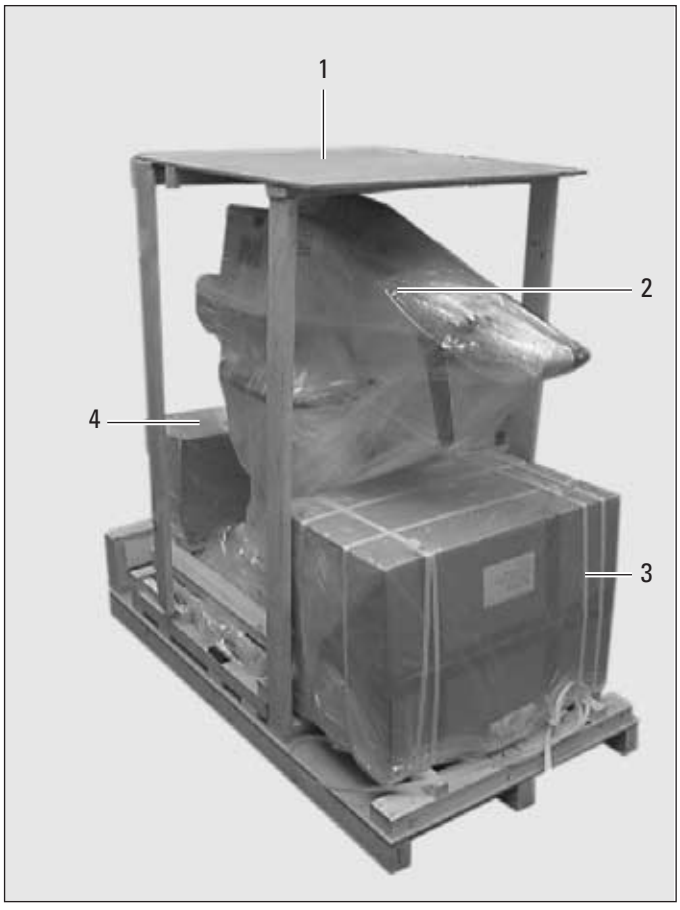
Caution
Risk of injury by falling wheel counterweight or cover!
⇨During the change, ensure that your feet are not under the wheel counterweight or the cover.

Warning
Risk of injury by movements of the microscope during balancing out!
⇨Do not remain in the immediate vicinity of the microscope during balancing out.

Caution
Damage to the microscope if cables get caught!
⇨Make sure that cables do not get caught between the microscope carrier and the cover and the microscope carrier.

Unpacking the transport container

Contents



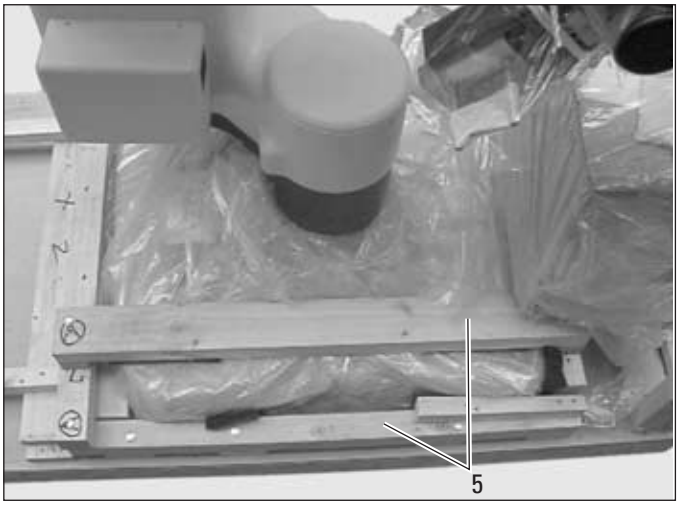
1 Ramp
2 Stand OH3
3 Crate with fitting parts
- Microscope carrier
- Handles
- Tool set
- Xenon illumination unit
- Diverse fitting parts

4 Crate with weights

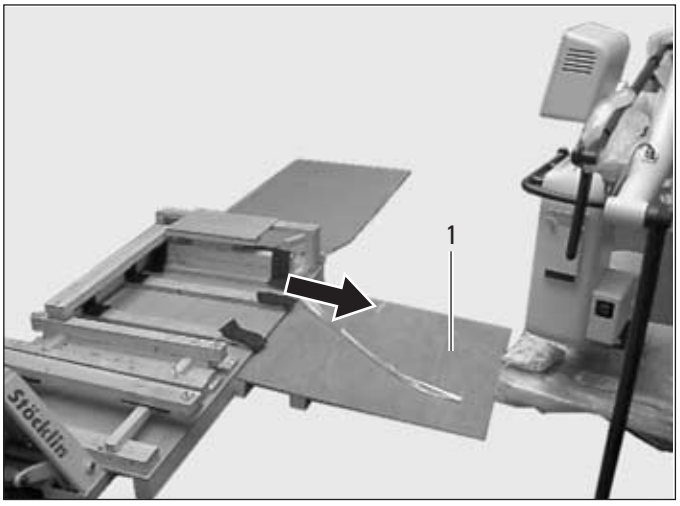
⇨Remove all the screws (hexagon, width across flats 10) from the side wooden strips of the carton package.
⇨Remove the carton package of the transport container upwards.

☞ Do not remove the packaging material of the stand before it is no longer positioned on the pallet.

⇨Remove the fixing planks (5) at the base of the stand.



⇨Place the ramp (1) before the pallet and travel the stand down carefully.
⇨Remove the packaging material of the stand.



☞ Have the following tools and materials ready before you start assembling the Leica M500 OH3 surgical microscope.

☞ You will need assistance for some of the work.

Accessories supplied

- All screws and nuts
- 2 piece reserve fuses 5 A and 10 A each
- 2 heavy and 3 light wheel counterweights

Tools

- Screwdriver for cross-head screws (size 00)
- Socket wrench with T grip (17 mm)
- 1 set of Allen keys
- Open-ended wrench 22 mm
- Screwdriver with grip for hexagon socket head screws (size 2.5 mm)

Assembly material

- Cable ties

Tightening moments for hexagon screws

⚠ **Caution**
Damage to microscope if the screws are tightened too excessively!

⇨Avoid the use of excessive force when tightening all screws.

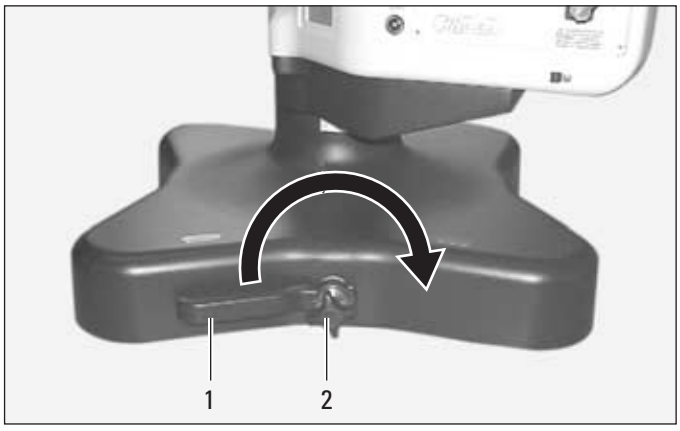
⇨Set the torque wrench to the torque specified. Apply the wrench until this torque is reached (signalled by a clicking noise). Do not tighten further.

Mounting the OH3 stand

Locking the OH3 stand

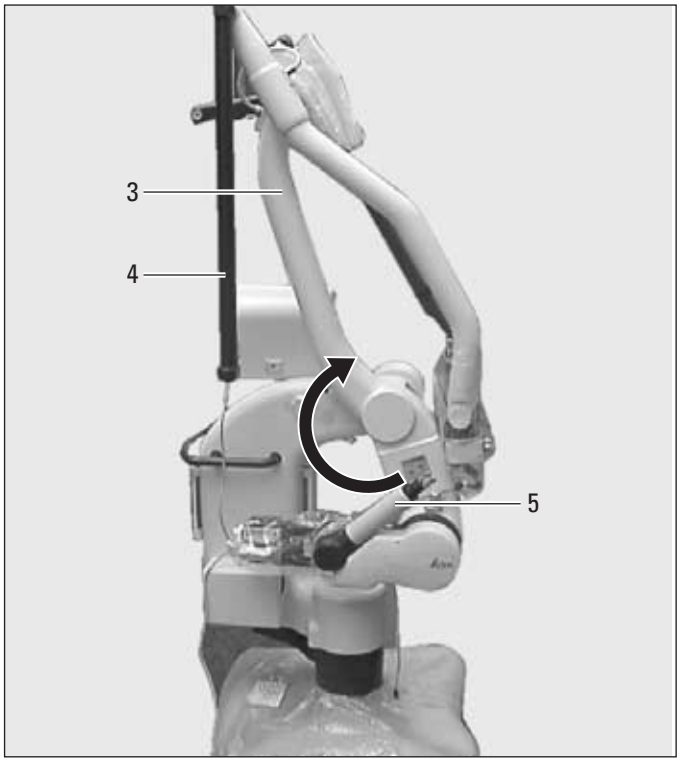
Warning
Risk of severe personal injury when the stand moves in an uncontrolled manner!
⇨Lock the foot brakes during the mounting process.

⇨Push the OH3 stand to the mounting site.
⇨Loosen the star grip (2) at the stand base.
⇨Turn the lever for the foot brake (1) to the right.
⇨Tighten the star grip again.

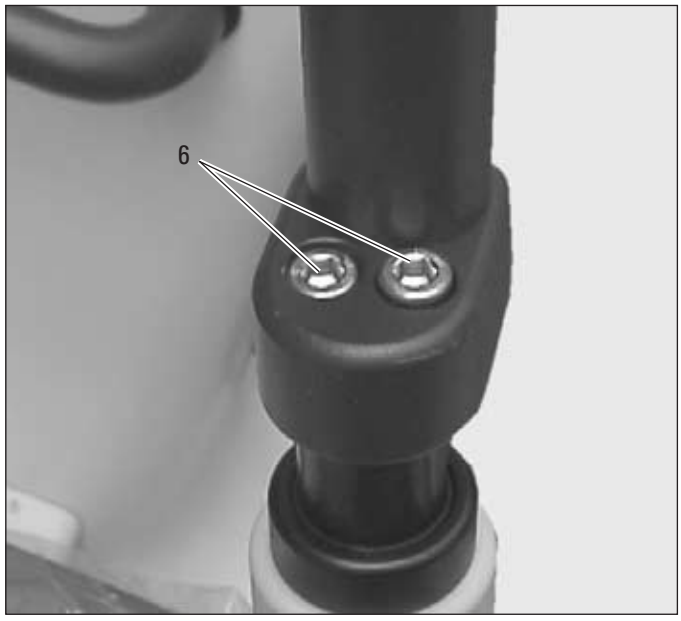


Mounting the connecting arm

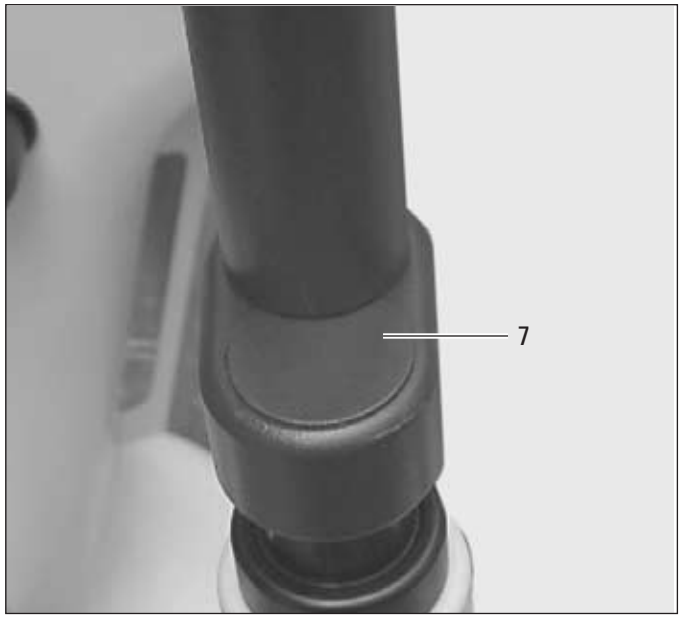
⇨Lift the swing arm (3) upwards.



⇨Connect the tension rod (4) to the arm (5) of the balancing unit.
⇨Tighten both Allen screws M10 x 45 (6) alternatively (tight slots!) (torque 43 Nm).

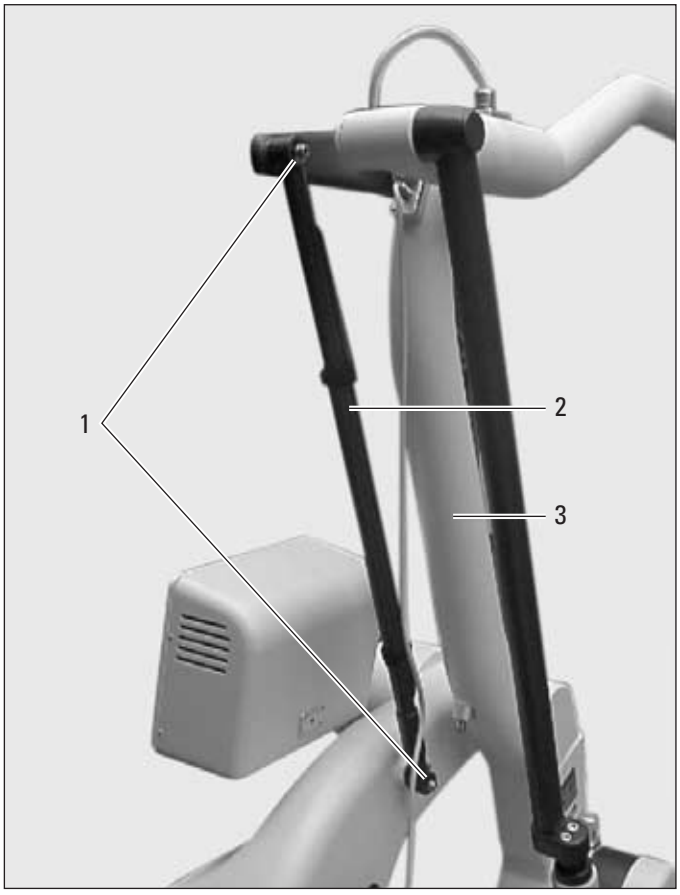


⇨Apply the cover (7).

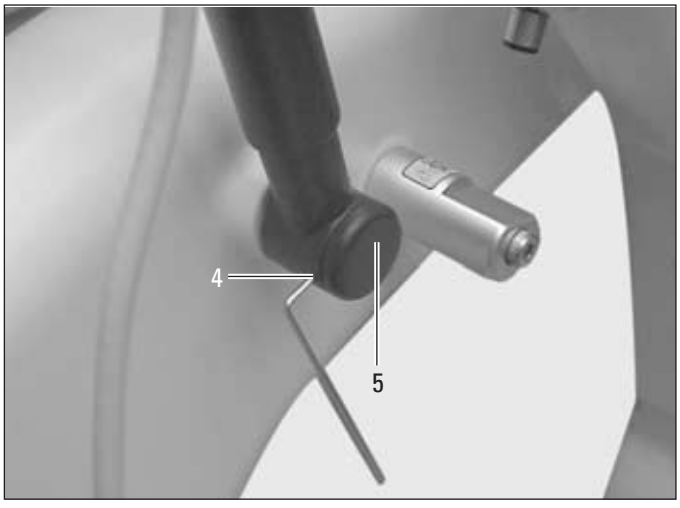


⇨Fasten the vertical cable channel (2) with 2 screws (1) M6 x 55 (torque 10.4 Nm).

☞ The open side of the cable channel (2) has to face the vertical arm (3).



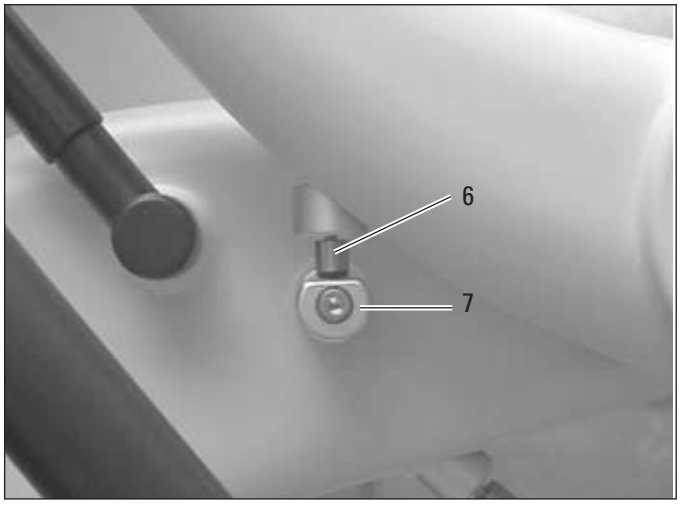
⇨Apply the upper and lower cover (5) and secure them with Allen screws (4).



Mounting the stop for the swinging arm

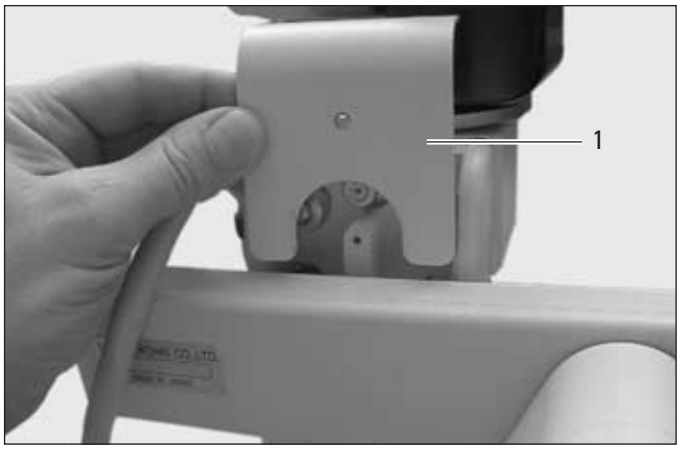
⇨Screw on the stop (7) with a screw M8 x 70 (torque 26 Nm).

☞ The flattened surface of the stop has to point to the shock absorber (6).

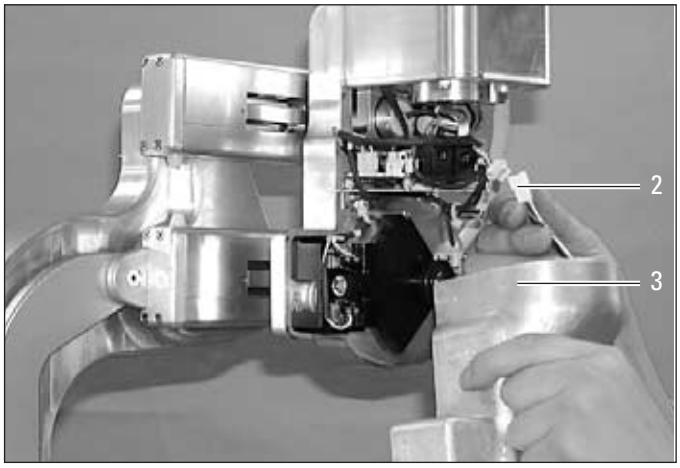


Mounting the microscope carrier

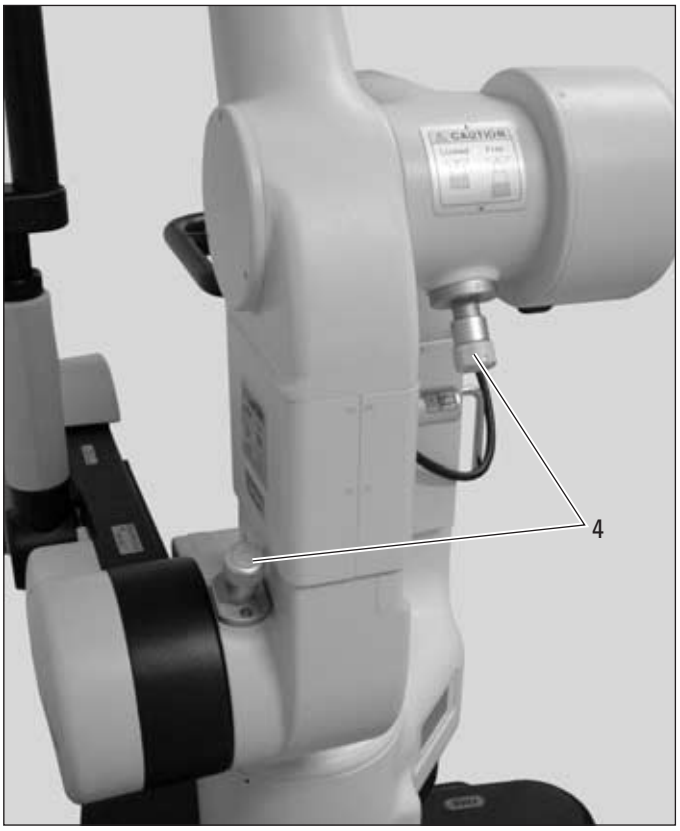
⇨Screw off the cover (1) at the microscope carrier.



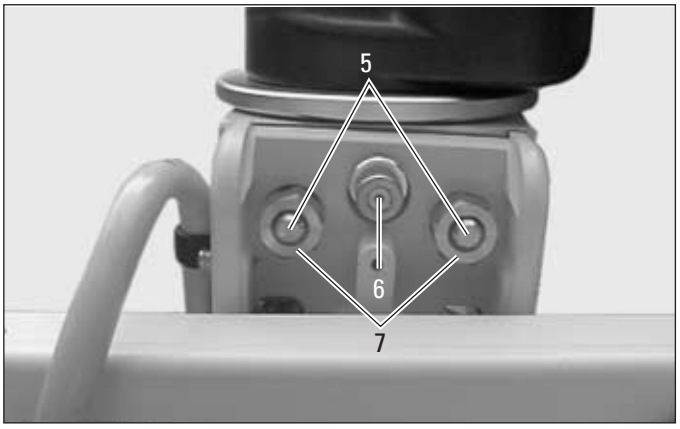
⇨Screw off the 2 screws and remove the cover (3).
⇨Loosen the connector (2).



⇨Lock the Leica M500 OH3 using the locking knobs (4) (see user manual for Leica M500 OH3).

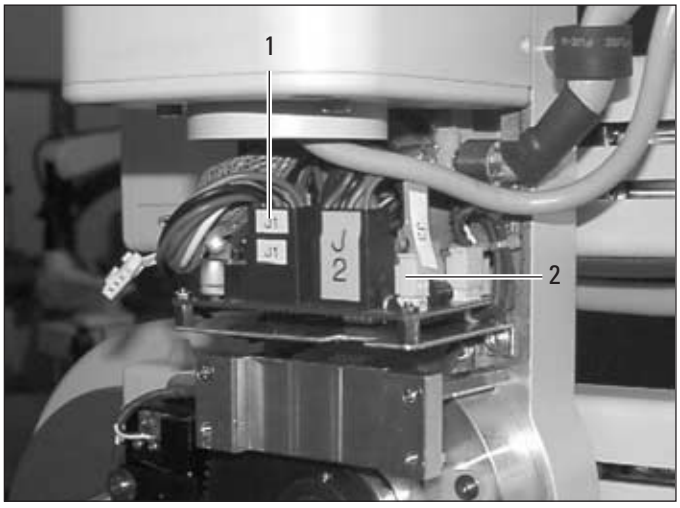


⇨Suspend the microscope carrier from the 2 threaded bolts (5) and the eccentric pin (6).
⇨Screw tight with two special fixing nuts M10 (conic rear) (7) (torque 26 Nm).

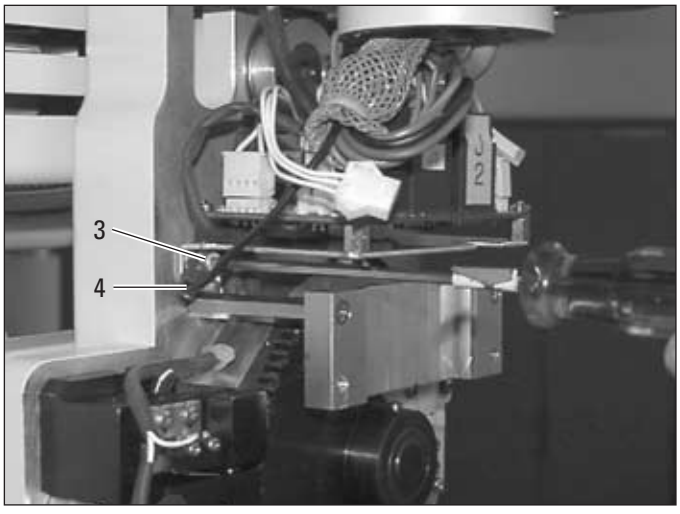


Establishing electrical connections

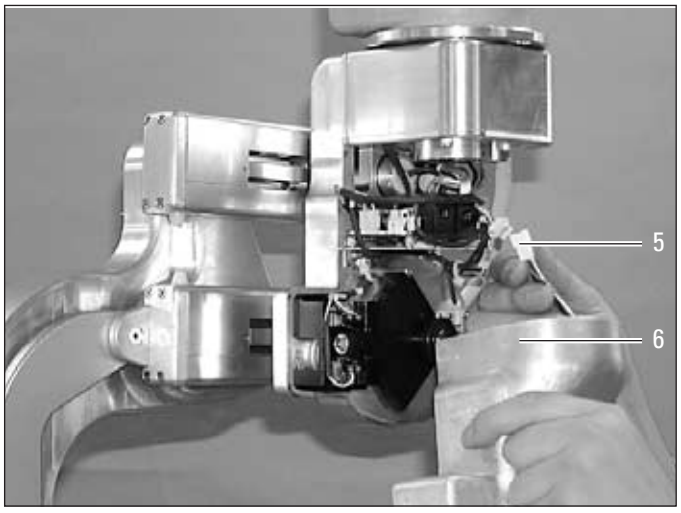
⇨Connect the cable connector J1 (1).
⇨Connect the cable connector J3 (2).



⇨Screw the earthing cable (4) to the microscope carrier by means of the screw (3).

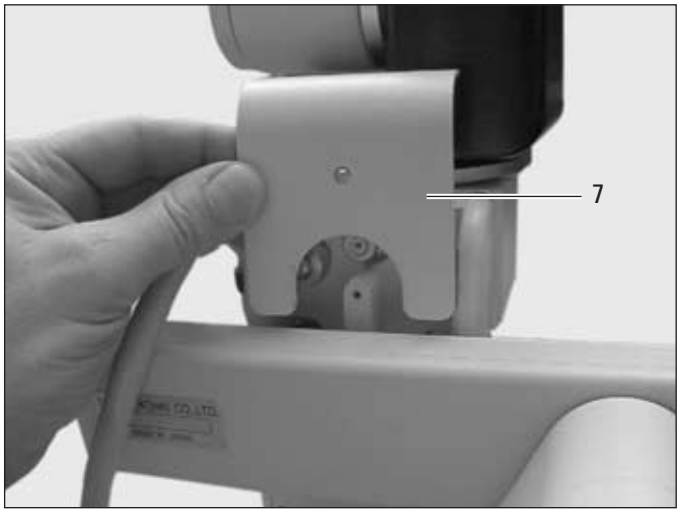


⇨Establish the electrical connection between the cover (6) and the microscope carrier by means of the connector (5).



Caution
Damage to the microscope if cables get caught!
⇨Make sure that cables do not get caught between the microscope carrier and the cover and the microscope carrier.

⇨Fasten the cover (6) by means of 2 screws to the microscope carrier.
⇨Re-attach the cover (7) to the microscope carrier.

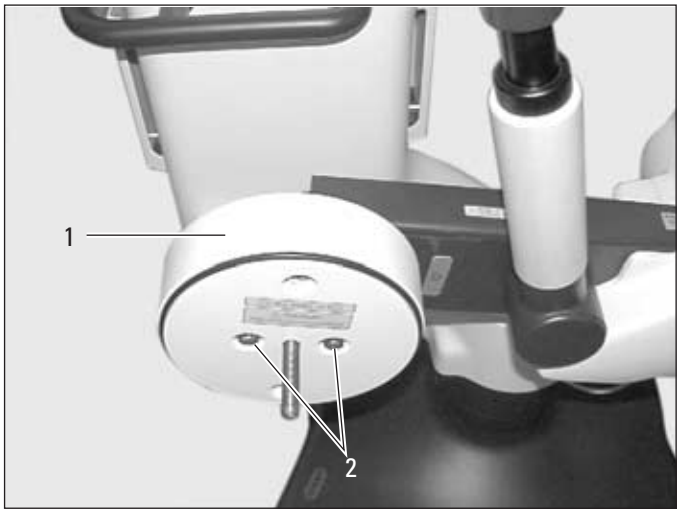


Mounting the weights

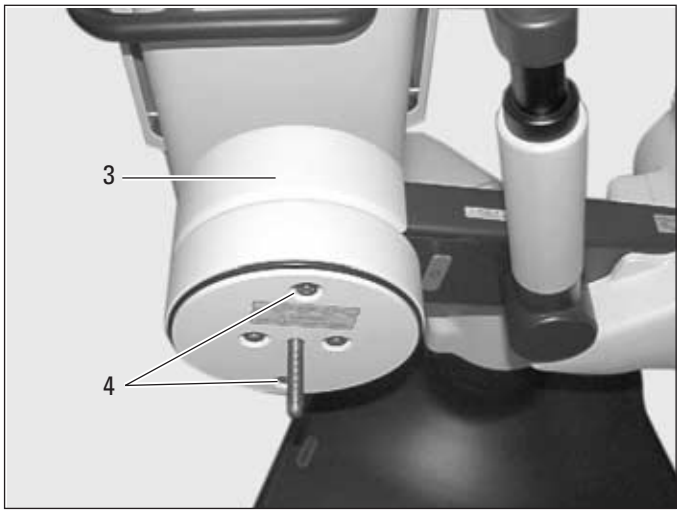
Caution
Risk of injury through falling wheel counterweight!
⇨During the change, ensure that your feet are not under the wheel counterweight.

☞ Do not yet mount the removable wheel counterweight and cover yet!

⇨Mount the front wheel counterweight (1) by means of two hexagon nuts M10 (2) (torque 30 Nm).



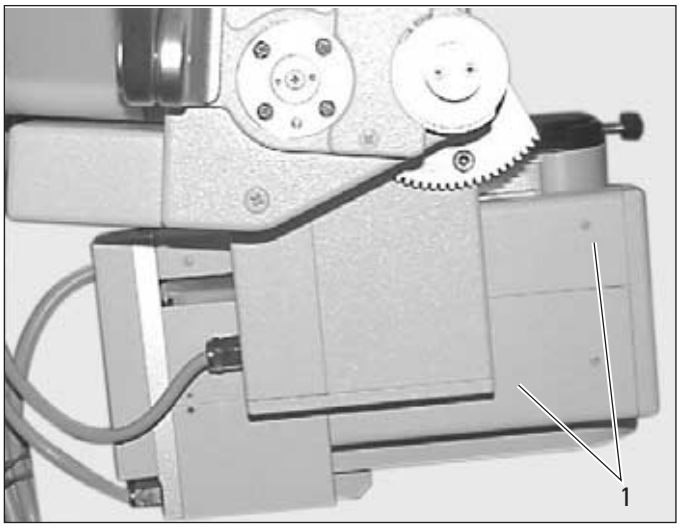
⇨Mount the rear wheel counterweight (3) by means of two hexagon nuts M10 (4) (torque 30 Nm).



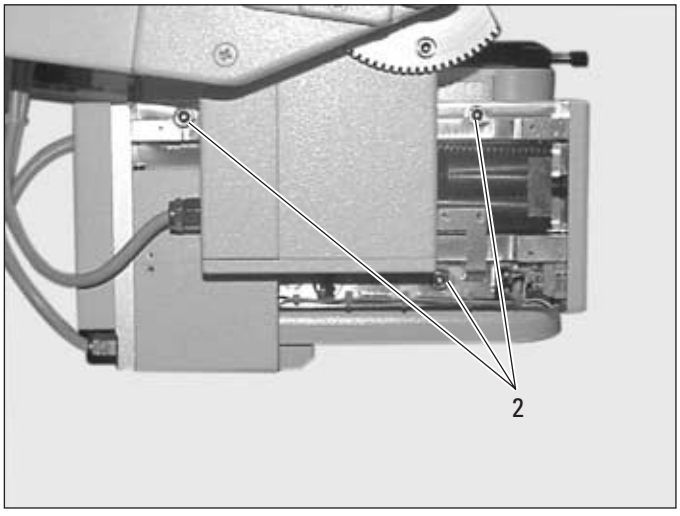
⇨Plug in the connector (5) of the cable connection at the balancing unit.

Mounting the optics carrier

⇨Remove the covers (1) at the A sledge.



⇨Fasten the optics carrier by means of 3 screws M5 x 15 (2) to the microscope carrier.



⇨Screw the covers (2) back on.

Mounting handgrips

☞ Only use the screws supplied to mount the right-hand handgrip. Longer screws can damage the optics carrier.

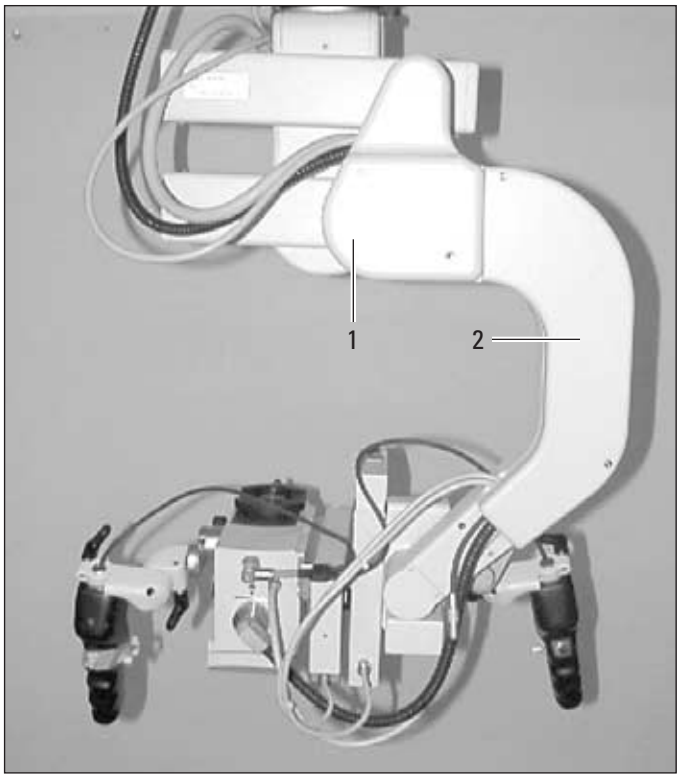
⇨Insert the shaft (3) of the right-hand handgrip into the optics carrier and secure it with four screws.

☞ The shaft can also be mounted displaced by 45°.

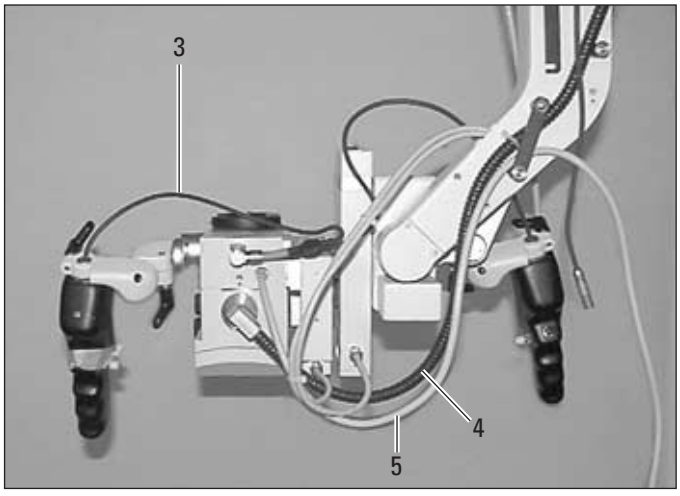
⇨Screw off the cover (5) and mount the left-hand handgrip to the shaft (4).
⇨Turn the left-hand handgrip to the desired position and tighten by means of the clamping screw (6).
⇨Mount the cover (5) again.

Cabling the microscope carrier

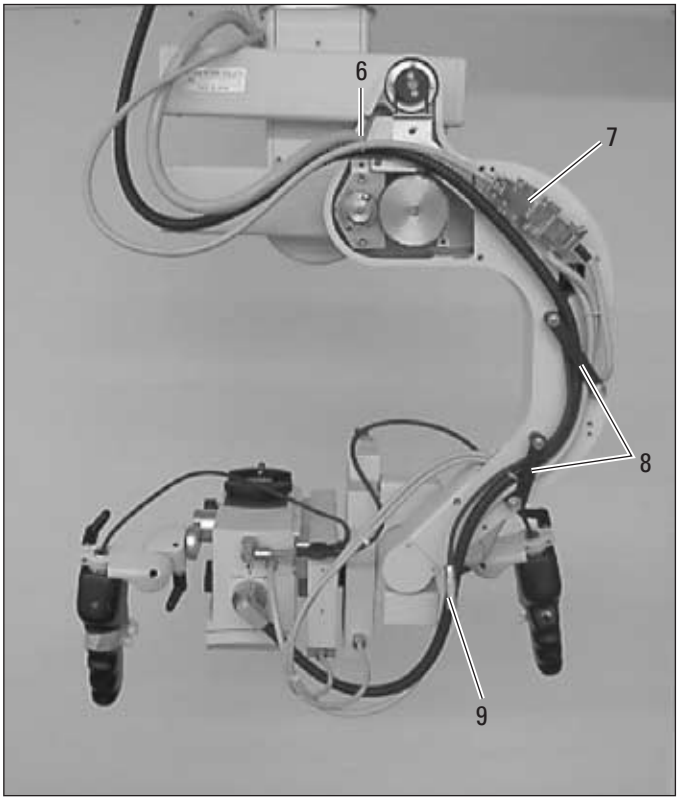
⇨Remove covers (1) and (2).



⇨Position the microscope carrier in the middle position of the 540° rotation range.
The green markings have to match.
⇨Lay the handgrip cable (3) as shown in the figure below and insert it into the optics carrier.
⇨Connect the fibre-optic cable (4) to the optics carrier.
⇨Bring together the CAN cable (5) from the optics carrier with the fibre-optic cable (4) and lay them so that the marking (6) of the fibre-optic cable lies at the microscope carrier entry.



⇨Lay the fibre-optic cable, CAN cable and mouth switch cable (9) in the microscope carrier in accordance with the figure below.
⇨Secure the connector (7) of the CAN cables by means of 2 screws.
⇨Secure the cables by means of the retaining brackets (8).
⇨Attach loose cables to each other using cable ties.



⇨Fasten the covers (1) and (2) by means of 2 screws each.

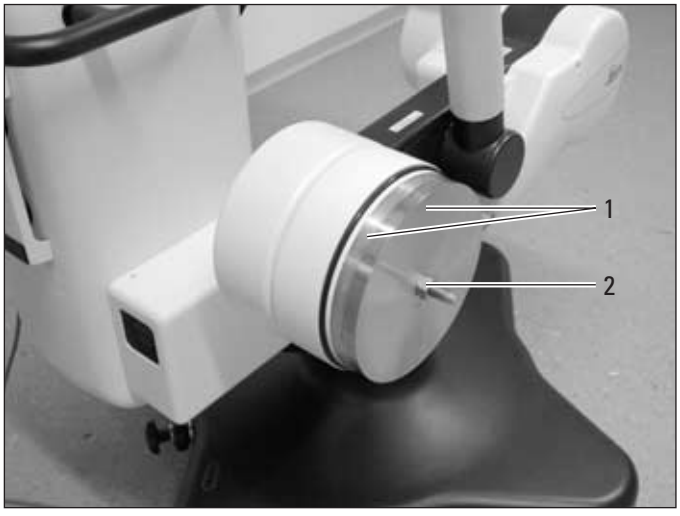
Laying a video cable or other additional cables

⇨Lay the video cable or other additional cables through the cable channel and the microscope carrier along the fibre-optic cable (4).

Mounting the removable wheel counterweight and cover

Caution
Risk of injury by falling wheel counterweight or cover!
⇨During the change, ensure that your feet are not under the wheel counterweight or the cover.

⇨Mount the accessories in the allowed weight range and lock the Leica M500 OH3 (see user manual for Leica M500 OH3).
⇨Slide on 2 thick and 2 thin counterweights (1) and screw tight by means of a hexagon nut (2).



⇨Screw the cover (3) onto the threaded rod and tighten it.

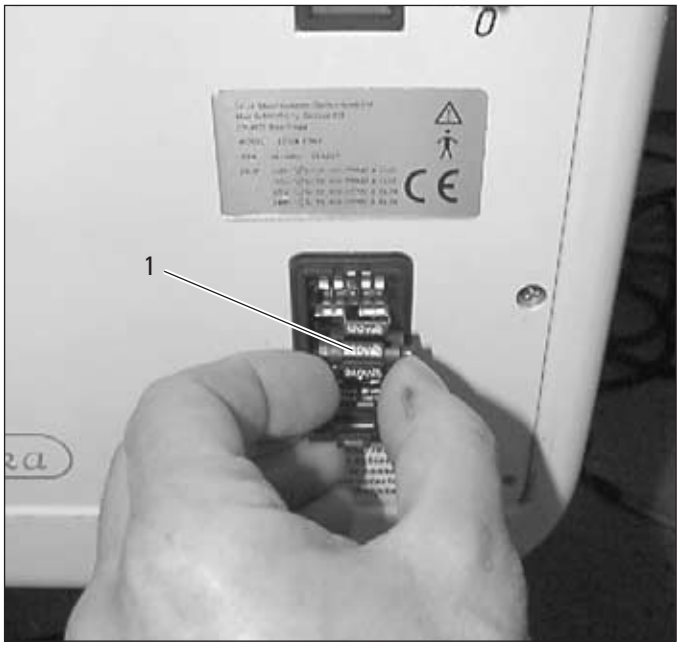
Checking and setting the voltage

⇨Check in the window (4) above the power plug whether the country-specific voltage is set.

Modifying the set voltage

⇨Use the screwdriver to remove the cover (5).

⇨Remove the drum (1), turn to the correct voltage and insert it again.

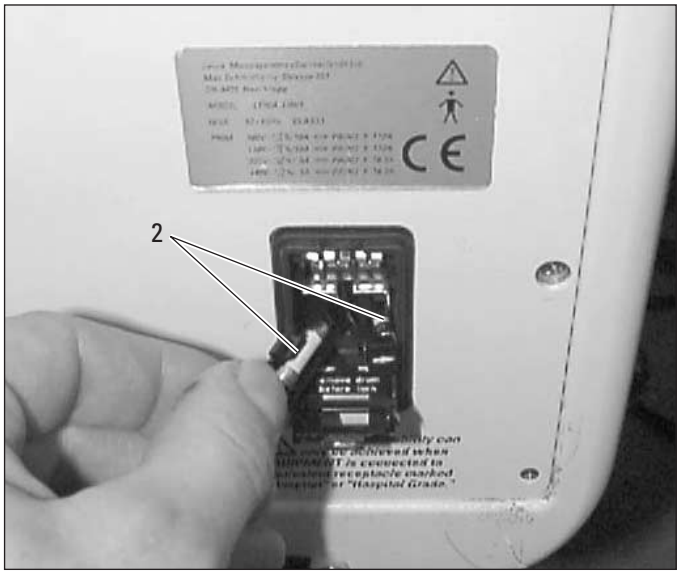


⇨If necessary, replace the fuses.

Checking/Setting fuses

Range 220 V–240 V: Two 5 A fuses, slow blow
Range 100 V–110 V: Two 10 A fuses, slow blow

☞ If the voltage range is changed, be sure to check the fuses (2) and replace them, if necessary.



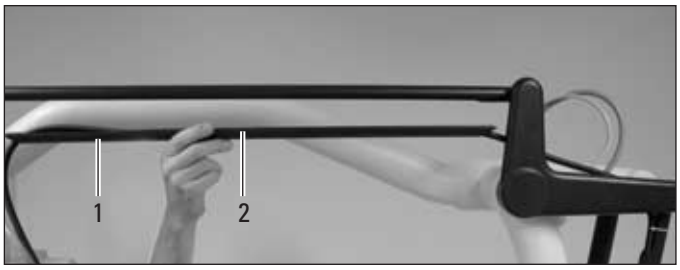
⇨Remove the fuses (2) from the holders and check the type. Replace, if necessary.

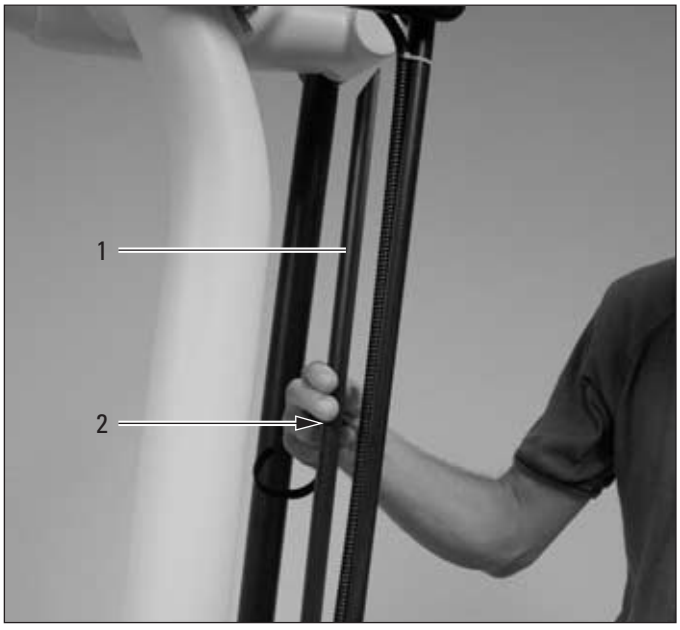
☞ The respective other fuse type is positioned under the cover (3) of the base pedestal.

⇨Plug in the power plug (4) and suspend the power cable in the cable bride (5) (strain relief).

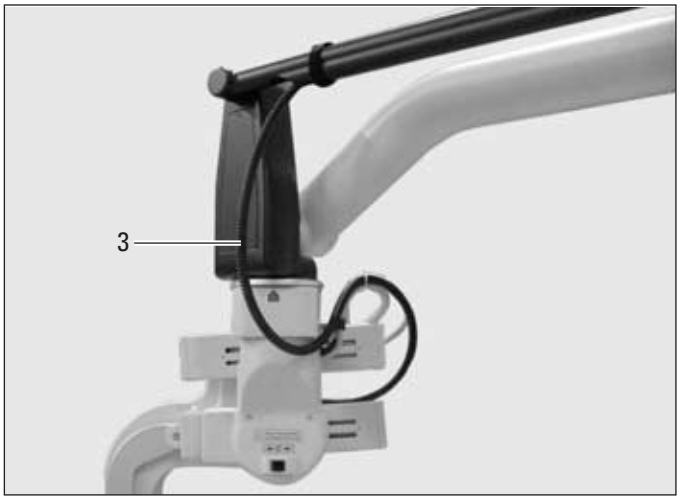
Mounting the fibre-optic cable

⇨Loosen the cable channels (1) and pull the fibre-optic cable in.



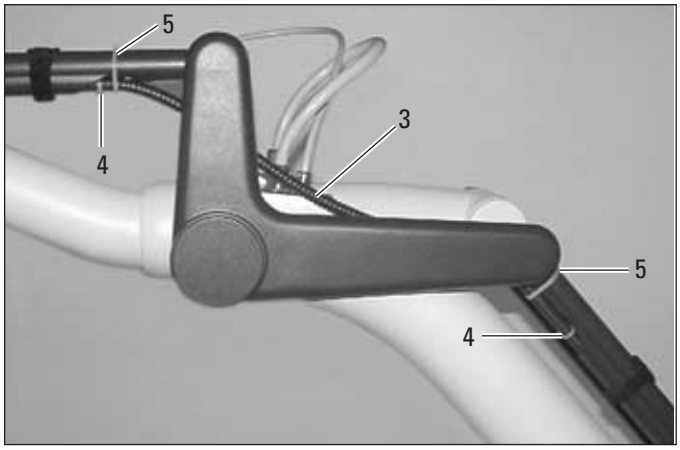


⇨Lay the fibre-optic cable (3) from the microscope carrier to the upper cable channel as is shown in the figure below.



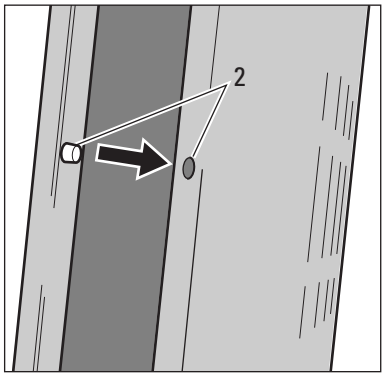
⇨Fasten the fibre-optic cable (3) in the stretched position of the stand by means of cable ties (5) to the cable channels.

☞ The markings (4) of the fibre-optic cable must be positioned next to the cable ties (5) of the fastenings.



⇨Close the cable channels again and fasten to each other by means of Velcro fasteners or cable ties.

☞ Positioning aids (2) are located at the cable channels (1) and must engage in the counter piece of the cable channel during installation.



Mounting lamps

⇨Open access hatch (1) for lamp inserts.

⇨Insert lamp inserts (2) and (5).

☞ When inserting a lamp insert make sure that the arrow (4) points to the right.

⇨Close access hatch (1) again.
⇨Connect the fibre-optic cable to connector (3) of the main illumination.

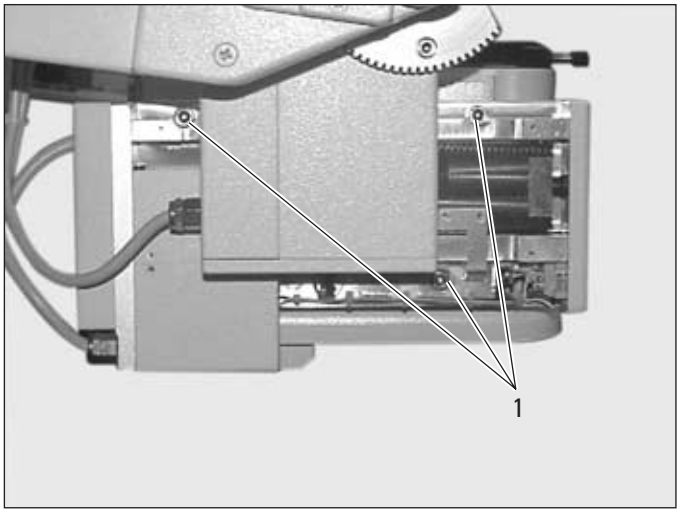
Disassembly

The Leica M500 OH3 is disassembled in the reverse sequence of operations to assembly.

When disassembling the optics carrier take care of the following:

☞ The Leica M500 OH3 has still to be operational!

⇨Move the A sledge to the central position.
The screws (1) are now accessible.



Checklist

❒Are all covers screwed on firmly?

❒Are all cables organized neatly?

❒Are all screws tightened with the specified torque?

❒Do any components contact each other when the Leica M500 OH3 is moved?

Balancing out the Leica M500 OH3

Warning
Risk of injury by movements of the microscope during balancing out.
⇨Do not remain in the immediate vicinity of the microscope during balancing out.

⇨Switch on the Leica M500 OH3.
⇨Refer to the Leica M500 OH3 user manual for the further actions.

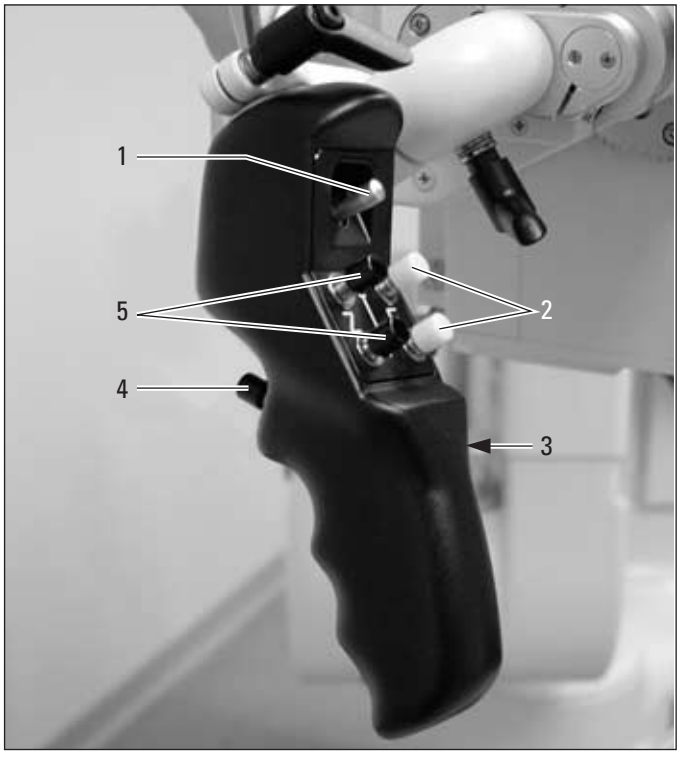
Checking the mobility

⇨Move the Leica M500 OH3 to the stretched position.
⇨Move each movable shaft until it stops. Ensure that cables have freedom of movement and are not tensioned.
If necessary:
⇨Loosen cables, increase size of cable loop and resecure with cable ties.

Carrying out functional checks

Further information on the tests listed here can be found in the Leica M500 OH3 user manual.

⇨Press ALL FREE button (4) on handgrip.
All brakes must be released.



⇨Press selector button (3) on handgrip.
The three brakes of the set brake grouping have to be released.
⇨Press the buttons for zoom (5) and focus (2).
⇨Check whether zoom and focus mechanisms on optics carrier move properly.
⇨Move the stand to its intended working position.
⇨Check each position of microscope to determine whether it remains in its position when brakes are released. There must be no perceptible upward, rearward or frontward tension. All movement must be silent and smooth.

Always allow the main and backup illuminators to remain lit for at least five minutes, otherwise the lighting capacity will be quickly reduced.

⇨Switch on the main illuminator and check its function.
⇨Plug over to the backup illuminator and check its function.
⇨Operate the joystick (1) at the handgrip.
The microscope carries out the corresponding XY movements.

Inspection and acceptance sequence

Once assembly or maintenance work is finished Leica Service will start the inspection and acceptance sequence.

The system as a whole should not be put into service until acceptance by Leica Service has taken place.

This inspection is aimed at determining whether
- the safety requirements concerning the protection of the patients and of the medical personnel have been met,
- the performance characteristics of the Leica M500 OH3 surgical microscope system are being delivered.

This is followed by the training of the personnel.

Acceptance certificate of the Leica M500 OH3 surgical microscope

Assembly and functional checking of the M500 OH3 surgical microscope was carried out properly in accordance with the regulations contained in the assembly instructions.

Name and address of the customer

Representative of the Leica Microsystems (Switzerland) Ltd.

Name

Address

Acknowledged Signature

Location Date

This delivery report is to be filled out by the responsible Leica representative.

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Leica Microsystems' Mission is to be the world's first-choice provider of innovative solutions to our customers' needs for vision, measurement, lithography and analysis of microstructures.

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The Business Unit SOM, within Leica Microsystems, holds the management system certificates for the international standards ISO 9001 and ISO 14001 / EN 46001 relating to quality management, quality assurance and environmental management.

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The companies of the Leica Microsystems Group operate internationally in five business segments, where we rank with the market leaders.

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Our expertise in microscopy is the basis for all our solutions for visualization, measurement and analysis of microstructures in life sciences and industry.

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We specialize in supplying complete solutions for histology and cytopathology.

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With confocal laser technology and image analysis systems, we provide three-dimensional viewing facilities and offer new solutions for cytogenetics, pathology and material sciences.

Medical Equipment

Innovative technologies in our surgical microscopes offer new therapeutic approaches in microsurgery. With automated instruments for ophthalmology, we enable new diagnostic methods to be applied.

Semiconductor Equipment

Our automated, leading-edge measurement and inspection systems and our E-beam lithography systems make us the first choice supplier for semiconductor manufacturers all over the world.

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